What is claimed is:

[Claim 1] 1. An automatic document feeder (ADF) scanner having a scanning module capable of positioning on a first scan position accurately, the automatic document feeder scanner comprising:

a housing;
an automatic document feeder installed on the housing for conveying a first document;
a first predetermined pattern installed on a bottom surface of the automatic document feeder, the first predetermined pattern having a first specific relative position relation with the first scan position;
a scanning module installed in the housing for capturing image data of the first document; and
a processor installed in the housing for controlling the scanning module and the ADF, and for determining a distance between the scanning module and the first scan position by analyzing the image data of the first predetermined pattern captured by the scanning module.

[Claim 2] 2. The automatic document feeder scanner of claim 1, wherein the scanning module positioned on the first scan position is capable of capturing the whole first document conveyed over the automatic document feeder.

[Claim 3] 3. The automatic document feeder scanner of claim 1, wherein the first predetermined pattern is an isosceles right-angled triangle, which has a first side perpendicular to a moving line along which the scanning module is passing, and an apex corresponding to the first side, the apex having the first specific relative position relation with the first scan position.

[Claim 4] 4. The automatic document feeder scanner of claim 3, wherein the isosceles right-angled triangle is solid, the processor determining the distance between the scanning module and the first scan position by measuring a length of the first predetermined pattern captured by the scanning module.

[Claim 5] 5. The automatic document feeder scanner of claim 3, wherein the isosceles right-angled triangle is hollow, the processor determining the distance between the scanning module and the first scan position by measuring a distance between two ending points of the first predetermined pattern captured by the scanning module.

[Claim 6] 6. The automatic document feeder scanner of claim 1, wherein the processor is capable of controlling the scanning module to move from a home position to the first scan position, and the first predetermined pattern is installed on an area of the bottom surface of the automatic document feeder where the scanning module while moving from the home position to the first scan position can capture the first predetermined pattern.

[Claim 7] 7. The automatic document feeder scanner of claim 1 further comprising a memory for storing a mapping table to map an image data of the first predetermined pattern to a length, the processor mapping an image data of the first predetermined pattern captured by the scanning module onto the mapping table and finding out a length corresponding to the captured image data, and determining the distance between the scanning module and the first scan position.

[Claim 8] 8. The automatic document feeder scanner of claim 1 further comprising a transparent document board for a second document to be placed on, and a second predetermined pattern installed on a bottom surface of the transparent document board, the second predetermined pattern having a

second specific relative position relation with a second scan position, on which the scanning module can capture the whole second document, and the processor further comprising a capability to determine a distance between the scanning module and the second scan position by analyzing an image data of the second predetermined pattern captured by the scanning module .

[Claim 9] 9. An automatic document feeder scanner having a scanning module capable of positioning on a first scan position accurately, the automatic document feeder scanner comprising:

a housing;
an automatic document feeder installed on the housing for conveying a first document, the automatic document feeder having a bottom surface and a first predetermined pattern installed on the bottom surface;
a first predetermined pattern installed on a bottom surface of the automatic document feeder, the first predetermined pattern having a first specific relative position relation with the first scan position;
a scanning module installed in the housing for capturing image data of the first document;
a memory installed in the housing for storing a first mapping table, which maps image data of the first predetermined pattern captured by the scanning module onto a variety of first length; and
a processor installed in the housing for controlling the scanning module and the ADF, and for finding out a first length corresponding to the captured image data in the mapping table according to the captured image data of the first predetermined pattern captured by the scanning module, and determining the distance between the scanning module and the first scan position according to the found first length.

[Claim 10] 10. The automatic document feeder scanner of claim 9, wherein the scanning module positioned on the first scan position can capture the whole first document conveyed over the automatic document feeder.

[Claim 11] 11. The automatic document feeder scanner of claim 9, wherein the processor is capable of controlling the scanning module to move from a home position to the first scan position, and the first predetermined pattern is installed on an area of the bottom surface of the automatic document feeder where the scanning module while moving from the home position to the first scan position can capture the first predetermined pattern.

[Claim 12] 12. The automatic document feeder scanner of claim 9 further comprising a transparent document board for a second document to be placed on, a second predetermined pattern installed on a bottom surface of the transparent document board, and a second mapping table stored in the memory for mapping image data of the second predetermined pattern captured by the scanning module onto a variety of second length, and the processor further comprising a capability to find out a second length corresponding to the image data of the second predetermined pattern captured by the scanning module in the second mapping table and determine a distance between the scanning module and a second scan position corresponding to the transparent document board according to the second length.

[Claim 13] 13. An automatic document feeder scanner comprising:

a housing;
an automatic document feeder installed on the housing for conveying a document;
a scanning module installed in the housing for capturing image data of the document;
a position detector installed in the housing for detecting a relative position relation between the automatic module document feeder and where the scanning module is located in the housing; and
a processor installed in the housing for controlling the movement of the scanning module according to the relative position relation between the automatic document feeder and where the scanning module is located in the

housing, and for controlling the scanning module to capture the image data of the document conveyed over the automatic document feeder.